

Ceramic Hybrid Drug Delivery System for Hard Tissue Therapy

장정호*

한국요업(세라믹)기술원

(jhchang@kicet.re.kr*)

This work demonstrated the highly controlled drug release and its controlled burst release at initial release time for a long period of time with HA nanocomposites of silicified L_3 -PNIPAm gels for hard tissue therapy, in which the silicified L_3 phase and its PNIPAm composite showed the 3-D disordered non-linear porous channels. The aim of this work is to explore a new potential property of capability of acting as a convenient reservoir for long-term controlled drug release for hard tissue. For this purpose, we introduced indomethacin (IMC) into the L_3 -PNIPAm gels integrated HA scaffold and subsequently demonstrated the *in vitro* drug release process by the step-wised temperature change. The silicified L_3 -PNIPAm/HA composites have been prepared, which allows the control of the burst release at the initial time with step-wised temperature. In vitro analysis carried out with prepared material showed the non-cytotoxic, and well growing on surface of the matrix.